

REMARKS/ARGUMENTS

The claims are 2-4 and 6-16, claims 1 and 5 having been canceled by the Preliminary Amendment dated October 8, 1999, which added new claim 16. Reconsideration of the claims is respectfully requested.

The Examiner has indicated that claims 1 and 7-14 contain allowable subject matter; however, the remaining claims were rejected 35 U.S.C. § 103(a) as being unpatentable over Gibbs U.S. Patent No. 5,901,232. Essentially, the Examiner's position was that Gibbs discloses a fast food drive up ordering menu board which reads on the sound recording or pick-up device for a public address system recited in the rejected claims.

This rejection is respectfully traversed.

As set forth in independent claim 16, Applicant's invention provides a sound recording device for a public address system that achieves not only a high degree of feedback protection and good isolation from ambient noise, but also a high degree of independence of the signal level from different speech directions and speaking positions, as well as protection from popping noises. The transmitted sound from a sound source from at least two sound recorders is recorded, and the signals combined by connecting the sound recorders electrically or acoustically to a grouped summation facility for the amplitudes of the signals. The sound recorders display directional characteristics and are

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arranged so that the axes of their main receiving directions each point to a position which corresponds with an ideal or set-point of the sound source. The summed amplitudes of the individual output signals of the sound recorders lead to an increase in the level of the sound signals whose origin is the reference point, which leads to a reduction in the level of ambient signals and makes it possible to record the sound with even regular levels despite deviations in the propagation path or position of the sound source.

In the simplest case, the sound recorders are a consistent distance from the reference position and are arranged on a circular or spherical element whose center point is formed by the reference position as more specifically recited in dependent claim 2. This arrangement produces determinably consistent transmission times between the reference position and the sound recorders. In this way, the signals of the sound recorders can be summed directly.

As more specifically recited in claim 3, transmission time elements can be determined by varying the distances between the reference position and the sound recorders. Varying distances can be necessary due to design or structural constraints. However, in order to maintain consistent transmission times, the various acoustic transmission times can be equalized by the transmission time elements so that the shorter transmission times

from the sound recorders, which are arranged closer to the reference position, can be artificially extended.

The Gibbs patent fails to disclose or suggest a sound recording device as recited in Applicant's independent claim 16 in which the sound recorders are connected electrically or acoustically to a grouped summation facility for the amplitude of the signals. Although the Examiner has taken the position that the computer 1b in Gibbs reads on a summation facility as the microphones are connected to the computer, it is respectfully submitted that this position is incorrect. Summation of the microphone signals not only is undisclosed or unsuggested in Gibbs, but also is contrary to the Gibbs system, which is concerned with the differences in the microphone signals. In Gibbs, the microphone signals serve to determine the position of the speaker by way of amplitude differences. That determination would never succeed if the microphone signals were added, as suggested by the Examiner. In any event, the common processing of a microphone in a computer 1b in Gibbs cannot be considered an addition of microphone signals as suggested by the Examiner, nor is there any disclosure or suggestion in Gibbs to engage in such summation of signals.

In claim 16, on the other hand, the summation of the signals, in terms of amplitude, has a decisive effect on the amplitude and direction amplification, which permits the maintenance of a greater distance from the audio source.

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Another difference between Gibbs and Applicant's sound recording device is that, in Gibbs, intensity measurements are made by way of additional microphones, which are not used at all later, during the subsequent audio transmission.

Gibbs also fails to disclose or suggest Applicant's sound recording device as recited in claim 2 in which the sound recorders are arranged on a circular or spherical element whose center point is created by the reference position. Contrary to the Examiner's position, the drawings in Gibbs simply show a parabola-shaped reflector surface arranged with a single microphone in the focus, which is in no way equivalent to the addition of signals. A parabolic arrangement does not exist at all in Applicant's device as recited in claim 2; rather, microphones are arranged on a circular track, as an exemplary embodiment, in order to achieve a uniform distance from an audio source. A parabolic arrangement would make no sense in this case, and in none of the cases in Applicant's device is there a question of reflecting sound as contemplated by Gibbs.

Gibbs also fails to disclose or suggest Applicant's sound recording devices recited in claim 3 in which transmission time elements are provided when varying distances between the reference position and the sound recorders exist. Gibbs contains no "transmission time elements," and no running time correction is performed in Gibbs.

With respect to the Examiner's comments concerning claim 5 (which was canceled in the Preliminary Amendment), it should be noted that FIG. 2a of Gibbs nowhere discloses or suggests that the sound recorders have a directional arrangement wherein the axes of the main receiving directions point to the reference point of the sound system. The arrangement shown in Figure 2a of Gibbs, in fact, has no significance at all for the working microphone signal, because the microphones mentioned are not used jointly in the arrangement shown and described, but rather are used only for detecting direction.

In the case of the Applicant's invention, on the other hand, several microphones point towards one point, and their signals are added. Although the function of a representation should be taken into consideration if a teaching is supposed to be derived from that representation, the mere depiction of the vectors set forth on FIG. 2a of Gibbs in no way discloses or suggests Applicant's invention as recited in claim 16 for the reasons stated above.

The remaining references, Sibbald et al. U.S. Patent No. 5,600,727 and Zakarauskas et al. U.S. Patent No. 5,526,433, cited by the Examiner which have not been applied to the claims, have been considered but are believed to be no more pertinent. The Sibbald et al. patent involves a running time assessment for determining position. Here, the work is carried out using artificial signals in the form of pulses, in other words, not

using the working audio signal. In addition, a running time measurement in Sibbald et al. does not, at the same time, mean a running time equalization for signals to be added in terms of amplitude. Accordingly, Sibbald et al. contains no teaching that would lead one skilled in the art to derive the invention as recited in Applicant's claim 16.

Zakarauskas et al. is concerned with the alignment of a parabolic reflector surface. In Applicant's device, however, no parabolic reflector surface and no reflector surface at all is used and, therefore, an alignment is not required.

In view of the foregoing, it is respectfully requested that the claims be allowed and that the application case be passed to issue.

Respectfully submitted,
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